WHAT IS CLAIMED IS:

1. A cell search method for a mobile station in a mobile communication system, the method being characterized by comprising steps of:

despreading a received signal with a spreading code common to all slots and detecting first slot boundaries on the basis of a first average correlation value calculated at intervals of first averaging time;

despreading said received signal with different spreading codes for said respective slots on the basis of the detected first slot boundaries and detecting frame boundaries and a scramble code group on the basis of a second average correlation value;

descrambling a common pilot signal on the basis of said detected frame boundaries and scramble code group, and detecting a scramble code on the basis of a third average correlation value;

detecting, concurrently with the step of detecting said frame boundaries and said scramble code group or the step of detecting said scramble code, second slot boundaries on the basis of a fourth average correlation value calculated through primary averaging executed at intervals of second averaging time;

determining whether or not the detected frame boundaries and scramble code are correct; and

repeating the process starting from the step of

detecting said frame boundaries and said scramble code group on the basis of said detected second slot boundaries, if the incorrectness of said frame boundaries or said scramble code is determined.

2. The cell search method according to Claim 1, characterized in that said second averaging time is different from said first averaging time.

3. The cell search method according to Claim 2, characterized in that said first averaging time is longer than said second averaging time.

4. The cell search method according to Claim 1, characterized in that said repeating step includes a step of comparing the time elapsed since the start of the step of detecting said first slot boundaries with a predetermined upper limit value and ending the repetition if it is determined as a result of the comparison that said elapsed time exceeds said upper limit value.

5. The cell search method according to Claim 1, characterized in that said repeating step includes a step of comparing the number of times that said frame boundaries and said scramble code have been detected with a predetermined upper limit value and ending the repetition if it is determined as a result of the comparison that said

number of times exceeds said upper limit value.

6. The cell search method according to Claim 1, characterized in that the step of detecting said second slot boundaries comprises calculating a fifth average correlation value by executing secondary averaging on the basis of said first average correlation value and said already calculated fourth average correlation value, and detecting second slot boundaries on the basis of the calculated fifth average correlation value.

7. The cell search method according to Claim 1, characterized in that said secondary averaging is a process of carrying out averaging after weighting said first average correlation value and said already calculated fourth average correlation value.

8. The cell search method according to Claim 7, characterized in that said weighting values are adaptively different from each other.

9. The cell search method according to Claim 8, characterized in that the correspondence between said weighting value and said first average correlation value is such that the more previously said first average correlation value is calculated relative to the time of the secondary averaging, the smaller said weighting value

is.

10. The cell search method according to Claim 9, characterized in that a rate at which said weighting value decreases increases consistently with a movement speed of said mobile station.

11. The cell search method according to Claim 6, characterized in that said secondary averaging is a process of carrying out averaging after multiplying said first average correlation value and said already calculated fourth average correlation value by respective forgetting factors.

12. The cell search method according to Claim 11, characterized in that values of said forgetting factors are adaptively different from each other.

13. The cell search method according to Claim 12, characterized in that the value of said forgetting factor decreases consistently with the movement speed of said mobile station.

14. The cell search method according to Claim 1, characterized by further comprising a step of determining a state of said mobile station, and said repeating step is executed if at the step of determining the state, it

is determined that said mobile station is communicating.

15. A cell search method for a mobile station in a mobile communication system, the method being characterized by comprising steps of:

despreading a received signal with a spreading code common to all slots and detecting first slot boundaries on the basis of a first average correlation value calculated at intervals of first averaging time;

despreading said received signal with different spreading codes for said respective slots on the basis of the detected first slot boundaries and detecting frame boundaries and a scramble code group on the basis of a second average correlation value;

descrambling a common pilot signal on the basis of said detected frame boundaries and scramble code group, and detecting a scramble code on the basis of a third average correlation value;

detecting, concurrently with the step of detecting said frame boundaries and said scramble code group or the step of detecting said scramble code, second slot boundaries on the basis of a fourth average correlation value calculated through primary averaging executed at intervals of second averaging time; and

suspending the step of detecting said frame boundaries and said scramble code group or the step of detecting said scramble code and repeating the process starting from the

step of detecting said frame boundaries and said scramble code group on the basis of said second slot boundaries detected during a present search, if the detected second slot boundaries are different from said second slot boundaries detected during a last cell search.

16. The cell search method according to Claim 15, characterized in that said second averaging time is different from said first averaging time.

17. The cell search method according to Claim 16, characterized in that said first averaging time is longer than said second averaging time.

18. The cell search method according to Claim 15, characterized in that said repeating step includes a step of comparing the time elapsed since the start of the step of detecting said first slot boundaries with a predetermined upper limit value and ending the repetition if it is determined as a result of the comparison that said elapsed time exceeds said upper limit value.

19. The cell search method according to Claim 15, characterized in that said repeating step includes a step of comparing the number of times that said frame boundaries and said scramble code have been detected with a predetermined upper limit value and ending the repetition

if it is determined as a result of the comparison that said number of times exceeds said upper limit value.

20. The cell search method according to Claim 15, characterized in that the step of detecting said second slot boundaries comprises calculating a fifth average correlation value by executing secondary averaging on the basis of said first average correlation value and said already calculated fourth average correlation value, and detecting second slot boundaries on the basis of the calculated fifth average correlation value.

21. The cell search method according to Claim 20, characterized in that said secondary averaging is a process of carrying out averaging after weighting said first average correlation value and said already calculated fourth average correlation value.

22. The cell search method according to Claim 21, characterized in that said weighting values are adaptively different from each other.

23. The cell search method according to Claim 22, characterized in that the correspondence between said weighting value and said first average correlation value is such that the more previously said first average correlation value is calculated relative to the time of

the secondary averaging, the smaller said weighting value is.

24. The cell search method according to Claim 23, characterized in that a rate at which said weighting value decreases increases consistently with a movement speed of said mobile station.

25. The cell search method according to Claim 20, characterized in that said secondary averaging is a process of carrying out averaging after multiplying said first average correlation value and said already calculated fourth average correlation value by respective forgetting factors.

26. The cell search method according to Claim 25, characterized in that values of said forgetting factors are adaptively different from each other.

27. The cell search method according to Claim 26, characterized in that the value of said forgetting factor decreases consistently with the movement speed of said mobile station.

28. The cell search method according to Claim 15, characterized by further comprising a step of determining a state of said mobile station, and said repeating step

is executed if at the step of determining the state, it is determined that said mobile station is communicating.

29. A mobile station in a mobile communication system, the station characterized by comprising:

means for despreading a received signal with a spreading code common to all slots and detecting first slot boundaries on the basis of a first average correlation value calculated at intervals of first averaging time,

means for despreading said received signal with different spreading codes for said respective slots on the basis of the detected first slot boundaries and detecting frame boundaries and a scramble code group on the basis of a second average correlation value;

means for descrambling a common pilot signal on the basis of the detected frame boundaries and scramble code group, and detecting a scramble code on the basis of a third average correlation value;

means for detecting second slot boundaries on the basis of a fourth average correlation value calculated by subjecting said received signal to primary averaging at intervals of second averaging time; and

means for determining whether or not said detected frame boundaries and scramble code are correct, and

wherein if the determining means determines the incorrectness of said frame boundaries or said scramble code, the means for detecting said frame boundaries and

said scramble code group detects said frame boundaries and said scramble code group on the basis of said detected second slot boundaries.

30. The mobile station according to Claim 29, characterized in that said second averaging time is different from said first averaging time.

31. The mobile station according to Claim 30, characterized in that said first averaging time is longer than said second averaging time.

32. The mobile station according to Claim 29, characterized by further comprising means for comparing the time elapsed since the start of the step of detecting said first slot boundaries with a predetermined upper limit value and ending the detection of said frame boundaries and said scramble code if it is determined as a result of the comparison that said elapsed time exceeds said upper limit value.

33. The mobile station according to Claim 29, characterized by further comprising means for comparing the number of times that said frame boundaries and said scramble code have been detected with a predetermined upper limit value and ending the detection of said frame boundaries and said scramble code if it is determined as

a result of the comparison that said number of times exceeds said upper limit value.

34. The mobile station according to Claim 29, characterized in that the means for detecting said second slot boundaries calculates a fifth average correlation value by executing secondary averaging on the basis of said first average correlation value and said already calculated fourth average correlation value, and detects second slot boundaries on the basis of the calculated fifth average correlation value.

35. The mobile station according to Claim 34, characterized in that said secondary averaging is a process of carrying out averaging after weighting said first average correlation value and said already calculated fourth average correlation value.

36. The mobile station according to Claim 35, characterized in that said weighting values are adaptively different from each other.

37. The mobile station according to Claim 36, characterized in that the correspondence between said weighting value and said first average correlation value is such that the more previously said first average correlation value is calculated relative to the time of

the secondary averaging, the smaller said weighting value is.

38. The mobile station according to Claim 37, characterized in that a rate at which said weighting value decreases increases consistently with a movement speed of said mobile station.

39. The mobile station according to Claim 34, characterized in that said secondary averaging is a process of carrying out averaging after multiplying said first average correlation value and said already calculated fourth average correlation value by respective forgetting factors.

40. The mobile station according to Claim 39, characterized in that values of said forgetting factors are adaptively different from each other.

41. The mobile station according to Claim 40, characterized in that the value of said forgetting factor decreases consistently with the movement speed of said mobile station.

42. The mobile station according to Claim 29, characterized in that said determining means execute said determination if said mobile station is communicating.

43. A mobile station in a mobile communication system, the station being characterized by comprising:

means for despreading a received signal with a spreading code common to all slots and detecting first slot boundaries on the basis of a first average correlation value calculated at intervals of first averaging time;

means for despreading said received signal with different spreading codes for said respective slots on the basis of the detected first slot boundaries and detecting frame boundaries and a scramble code group on the basis of a second average correlation value;

means for descrambling a common pilot signal on the basis of said detected frame boundaries and scramble code group, and detecting a scramble code on the basis of a third average correlation value;

means for detecting second slot boundaries on the basis of a fourth average correlation value calculated through primary averaging executed at intervals of second averaging time; and

means for suspending the detection by the means for detecting said frame boundaries and said scramble code group or the means for detecting said scramble code, and detecting said frame boundaries and said scramble code group on the basis of said detected second slot boundaries, if said detected second boundaries are different from said first slot boundaries or said second slot boundaries

detected during a last cell search.

44. The mobile station according to Claim 43, characterized in that said second averaging time is different from said first averaging time.

45. The mobile station according to Claim 44, characterized in that said first averaging time is longer than said second averaging time.

46. The mobile station according to Claim 43, characterized by further comprising means for comparing the time elapsed since the start of the step of detecting said first slot boundaries with a predetermined upper limit value and ending the detection of said frame boundaries and said scramble code if it is determined as a result of the comparison that said elapsed time exceeds said upper limit value.

47. The mobile station according to Claim 43, characterized by further comprising means for comparing the number of times that said frame boundaries and said scramble code have been detected with a predetermined upper limit value and ending the detection of said frame boundaries and said scramble code if it is determined as a result of the comparison that said number of times exceeds said upper limit value.

48. The mobile station according to Claim 43, characterized in that the means for detecting said second slot boundaries calculates a fifth average correlation value by executing secondary averaging on the basis of said first average correlation value and said already calculated fourth average correlation value, and detects second slot boundaries on the basis of the calculated fifth average correlation value.

49. The mobile station according to Claim 48, characterized in that said secondary averaging is a process of carrying out averaging after weighting said first average correlation value and said already calculated fourth average correlation value.

50. The mobile station according to Claim 49, characterized in that said weighting values are adaptively different from each other.

51. The mobile station according to Claim 50, characterized in that the correspondence between said weighting value and said first average correlation value is such that the more previously said first average correlation value is calculated relative to the time of the secondary averaging, the smaller said weighting value is.

52. The mobile station according to Claim 51, characterized in that a rate at which said weighting value decreases increases consistently with a movement speed of said mobile station.

53. The mobile station according to Claim 48, characterized in that said secondary averaging is a process of carrying out averaging after multiplying said first average correlation value and said already calculated fourth average correlation value by respective forgetting factors.

54. The mobile station according to Claim 53, characterized in that values of said forgetting factors are adaptively different from each other.

55. The mobile station according to Claim 54, characterized in that the value of said forgetting factor decreases consistently with the movement speed of said mobile station.

56. The mobile station according to Claim 43, characterized in that said determining means execute said determination if said mobile station is communicating.